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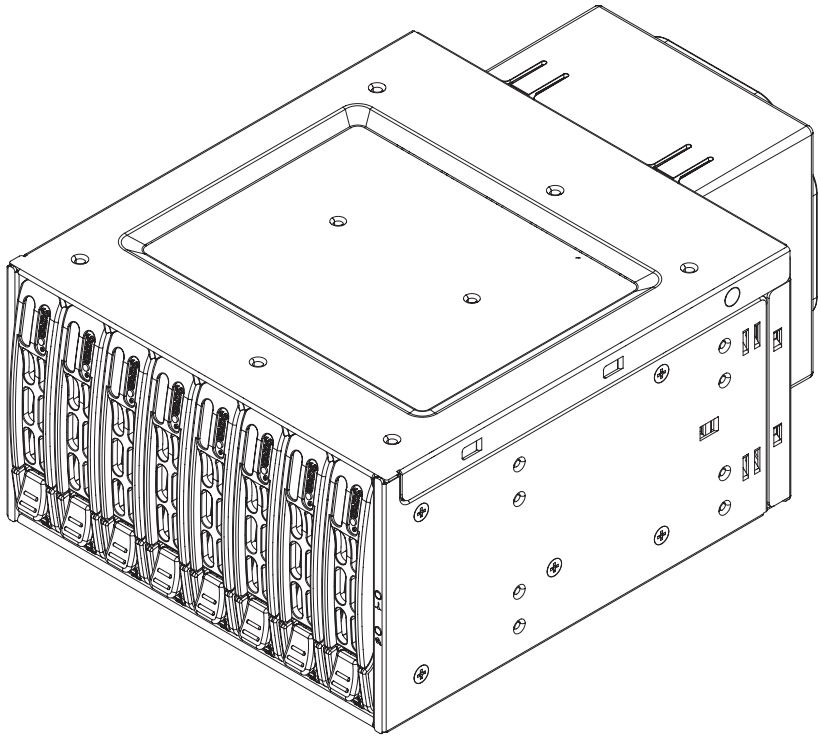

M28E1 and M28E2

MOBILE RACK

USER'S GUIDE

Rev. 2.0

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Manual Revision 2.0

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Chapter 1

Safety Guidelines

To avoid personal injury and property damage, carefully follow all the safety steps listed below when accessing your system or handling the components.

1-1 ESD Safety Guidelines

Electric Static Discharge (ESD) can damage electronic components. To prevent damage to your system, it is important to handle it very carefully. The following measures are generally sufficient to protect your equipment from ESD.

- Use a grounded wrist strap designed to prevent static discharge.
- Touch a grounded metal object before removing a component from the antistatic bag.
- Handle the RAID card by its edges only; do not touch its components, peripheral chips, memory modules or gold contacts.
- When handling chips or modules, avoid touching their pins.
- Put the card and peripherals back into their antistatic bags when not in use.

1-2 General Safety Guidelines

- Always disconnect power cables before installing or removing any components from the computer, including the backplane.
- Disconnect the power cable before installing or removing any cables from the backplane.
- Make sure that the backplane is securely and properly installed on the motherboard to prevent damage to the system due to power shortage.

1-3 An Important Note to Users

- All images and layouts shown in this user's guide are based upon the latest PCB Revision available at the time of publishing. The card you have received may or may not look exactly the same as the graphics shown in this manual.

Notes

Chapter 2

Introduction

2-1 Overview

This manual is written for system integrators, PC technicians and knowledgeable PC users. It provides detailed information for the installation and use of the M28E1/M28E2 Mobile Rack.

The Supermicro M28E1/M28E2 Mobile Rack showcases advanced technology innovations in modular connectivity and data transferability and supplies reliable, effective, and scalable solutions for tomorrow's data communications industry.

2-2 Product Features

The M28E1/M28E2 Mobile Rack provides the following:

- Slim design: pocket-size (5.5" W x 2.5" H)
- Two LSI SAS X12 Expanders built-in for the M28E2 and One LSI SAS X12 Expander for the M28E1
- Supports 8 x 2.5" SFF HDD
- Supports up to 5V/10A (Average) and 12V/10A (Average)
- Provides up to 3 Gbps transfer speed
- Supports SAS, SATA II with potential support of up to 144 SAS devices

Operating Systems

This mobile rack supports the following Operating Systems:

- Windows 2000, Windows XP, and Windows 2003
- Linux: Red Hat and SuSE

Additional Information

The M28E1/M28E2 Mobile Rack was designed for use in certain chassis and servers or as a stand alone unit. Use the chassis or server manual for installation instructions. Use the instructions listed in this manual to use the mobile rack independent of a chassis.

The pictures or graphics shown in this User's Guide were based upon the latest PCB revision available at the time of the publishing of this manual. The M28E1/M28E2 Mobile Rack may or may not look exactly the same as the graphics shown in this manual.

The availability of SAS-devices supported depends on the readiness of firmware and hardware support.

Chapter 3

Jumper Setting and Pin Definitions

3-1 Front Connectors and Jumpers

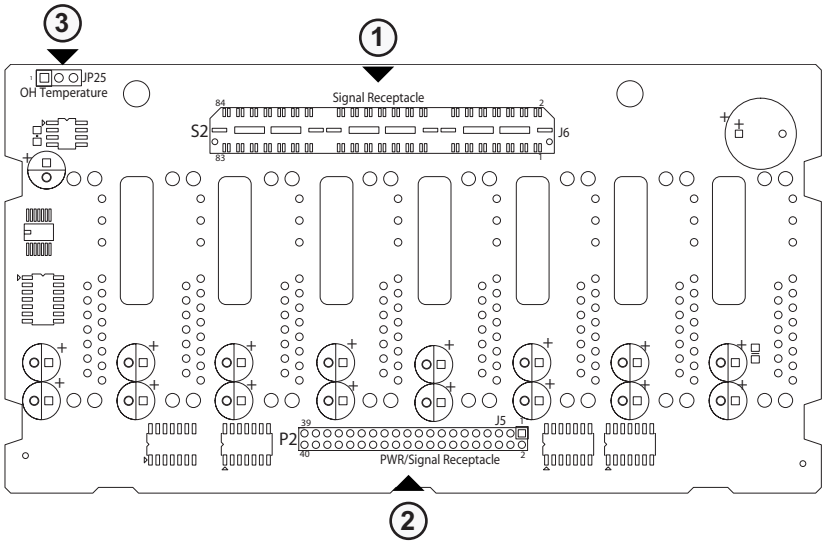


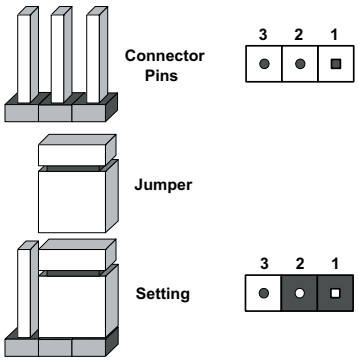
Figure 3-1. Mobile Rack Backplane (Front)

Front Connectors and Jumpers

1. Signal Receptacle
2. Power/Signal Receptacle
3. Jumper - JP25

Explanation of Jumpers

To modify the operation of the backplane, jumpers can be used to choose between optional settings. Jumpers create shorts between two pins to change the function of the connector. Pin 1 is identified with a square solder pad on the printed circuit board. Note: On two pin jumpers, "Closed" means the jumper is on and "Open" means the jumper is off the pins.



Jumper Settings		
Jumper	**Jumper Settings**	**Note**
JP25	Open: 45º C 1-2: 50º C 2-3: 55º C	Overheat Temperature.

Backplane Connectors	
Connector	**Description**
J5 (P2)	Power/Signal Receptacle
J6 (S2)	Power Receptacle

3-2 Rear Connectors and LED Indicators

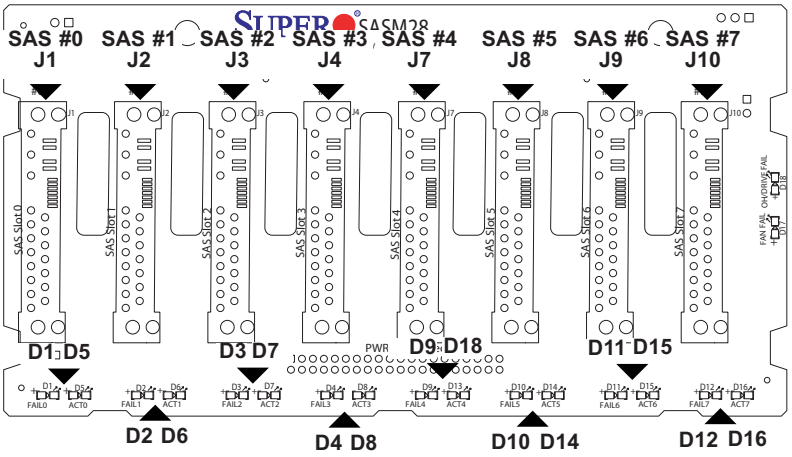


Figure 3-2. Mobile Rack Backplane (Rear)

Rear SAS/SATA Connectors	
Rear Connector	**SAS Drive Number**
SAS #0	SAS/SATA HDD #0
SAS #1	SAS/SATA HDD #1
SAS #2	SAS/SATA HDD #2
SAS #3	SAS/SATA HDD #3
SAS #4	SAS/SATA HDD #4
SAS #5	SAS/SATA HDD #5
SAS #6	SAS/SATA HDD #6
SAS #7	SAS/SATA HDD #7

Rear LED Indicators		
Rear LED	**Hard Drive Activity**	**Failure LED**
SAS #0	D5	D1
SAS #1	D6	D2
SAS #2	D7	D3
SAS #3	D8	D4
SAS #4	D18	D9
SAS #5	D14	D10
SAS #6	D15	D11
SAS #7	D16	D12

3-3 Expander Card

Front Connectors

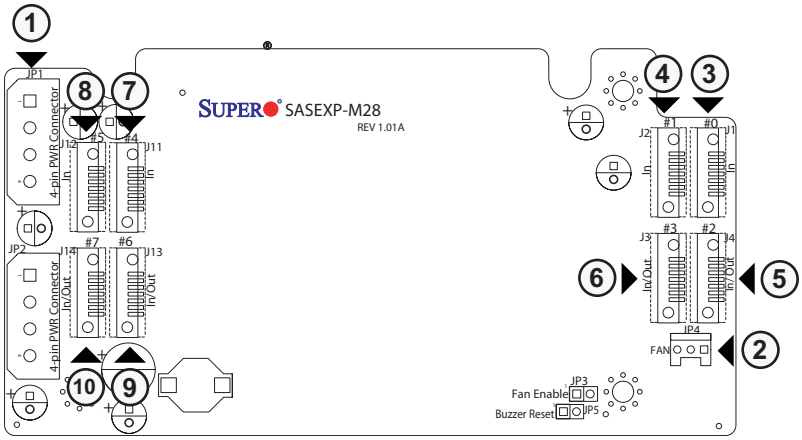


Figure 3-3. Expander Card E2 Model (Rear)

Front Connectors

1. Power Connectors (4-pin): J1 and J2
2. Fan Connector: JP4
3. SAS Port #0 J1
4. SAS Port #1 J2
5. SAS Port #2 J4
6. SAS Port #3 J3
7. SAS Port #4 J11
8. SAS Port #5 J12
9. SAS Port #6 J13
10. SAS Port #7 J14

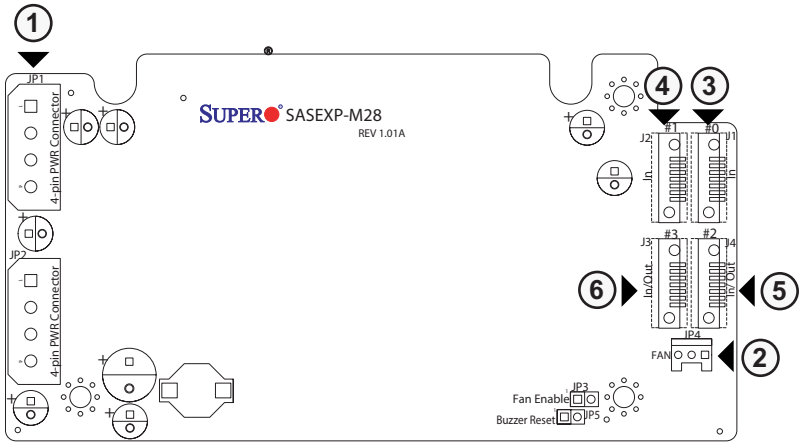


Figure 3-4. Expander Card E1 Model (Rear)

Front Connector and Pin Definitions

1. Backplane Main Power Connectors

The 4-pin connectors, designated JP1 and JP2 provide power to the backplane. See the table on the right for pin definitions.

Backplane Main Power 4-Pin Connector (JP1 and JP2)	
Pin#	Definition
1	+12V
2 and 3	Ground
4	+5V

2. Fan Connectors

The 3-pin connector, designated JP4, provides power to the fan. See the table on the right for pin definitions.

Fan Connector (JP4)	
Pin#	Definition
1	Ground
2	+12V
3	Tachometer

3-10. SAS Ports

The SAS ports are used to connect the SAS drive cables. The 8 ports are designated #0 - #7.

NOTE: Ports #4, #5, #6, and #7 are available on the E2 Models only.

SAS Ports	
Port#	Information
0	IN
1	IN
2	IN and OUT
3	IN and OUT
4	IN
5	IN
6	IN and OUT
7	IN and OUT

Jumper Settings

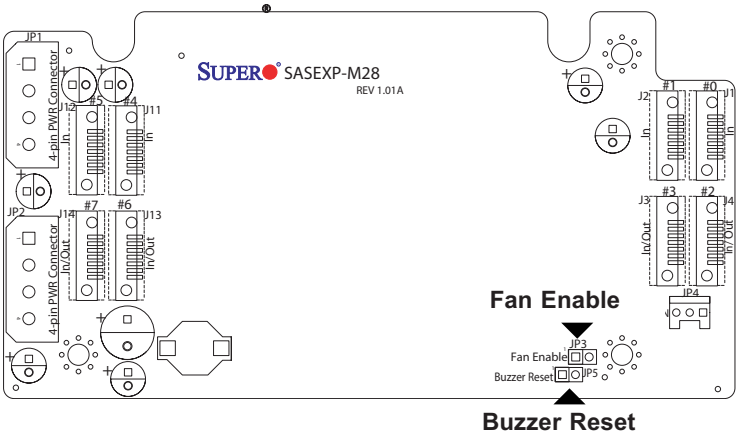
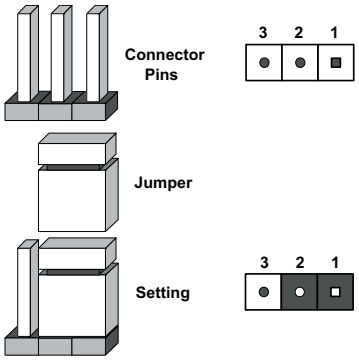


Figure 3-5. Expander Card E2 Model (Rear)

Explanation of Jumpers

To modify the operation of the backplane, jumpers can be used to choose between optional settings. Jumpers create shorts between two pins to change the function of the connector. Pin 1 is identified with a square solder pad on the printed circuit board. Note: On two pin jumpers, "Closed" means the jumper is on and "Open" means the jumper is off the pins.



Jumper Settings		
Jumper	**Jumper Settings**	**Note**
J3	Closed: With Fan Open: No Fan	Fan Enable
J5	Open: Enabled Closed: Disabled	Buzzer Reset

Chapter 4

Installation Instructions

4-1 Shipping List

Examine the your order for the following parts:

- M28E1/M28E2 Mobile Rack
- One 80mm Cooling Fan (Fan 0084)
- 32 - M3 screws
- Four Round head screws
- SATA 4-lane cable

4-2 Tools Required

M28E series Mobile Rack assembly requires the following:

- Phillips head screwdriver
- Industry standard anti-static strap (recommended)

4-3 Other Parts

When using this mobile rack independent of a chassis, you may need the following parts.

- 4-pin Power cord extension (to connect the mobile rack to a power supply)
- SAS iPass cable (part number CBL-0116; used to connect the SAS ports to the motherboard or add-on card)

4-4 Setup and Installation Steps

Use the following list as a guide to setup and install the mobile rack. If this mobile rack is to be installed in a chassis, use the instructions in the chassis manual.

1. Unpack and examine system parts.
2. Review all system and safety guidelines.
3. Install the system fan.
4. Install the hard drives.
5. Connect data and power cables.

4-5 General Safety Guidelines

- Always disconnect power cables before installing or removing any components from the computer, including the backplane.
- Disconnect the power cable before installing or removing any cables from the mobile rack or backplane.
- Make sure that the backplane is securely and properly installed on the motherboard to prevent damage to the system due to power shortage.

4-6 Before Accessing the Mobile Rack

1. Power down and power supply connected to the chassis or server. In addition, unplug all power cords from the wall outlet.
2. Disconnect all necessary cables and label the cables for easy identification.
3. Use a grounded wrist strap designed to prevent static discharge when handling components.
4. Save all screws and fasteners for later use.
5. Familiarize yourself with and follow the instructions in this section.

4-7 Cooling Fan Installation

When using the M28E1 or M28E2 without installing the mobile rack in a larger unit (such as a chassis), you must install a cooling fan.

For more information on installing the mobile rack into a chassis or server, see the documentation for your mobile rack or server. You can also visit our website at http://www.supermicro.com.

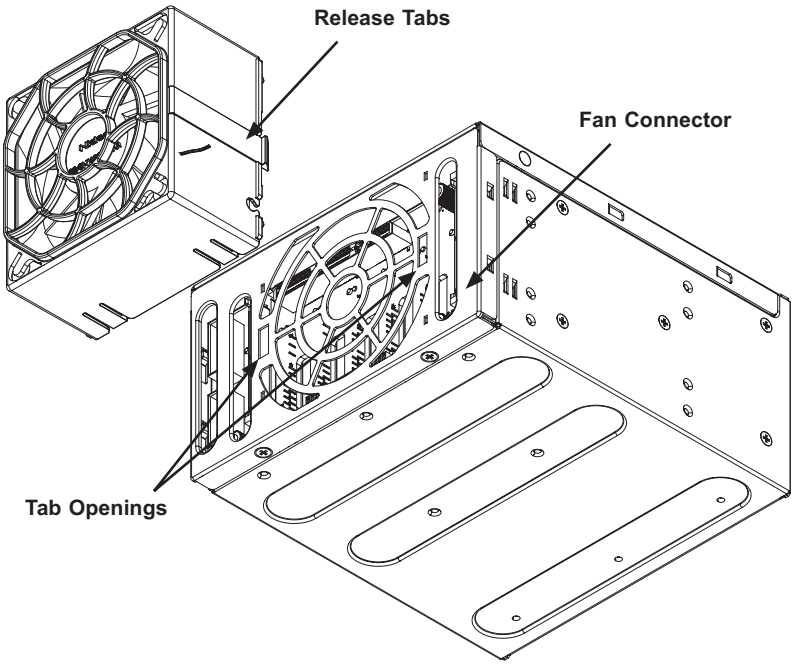


Figure 4-1. Mobile Rack with Fan

Use the following instructions to install the cooling fan

1. Press the release tabs on both sides of the cooling fans, as shown.
2. Attach the fans to the mobile rack by sliding the release tabs into the openings until the fan clicks into place.
3. Attach the cooling fan cable to the Fan Connector.

Fan Removal

Use the following instructions to remove the cooling fan from the mobile rack:

1. Remove the fan cable from the mobile rack by gently, but firmly pulling the cable from the backplane.

2. Press both release tabs and pull the fan from the mobile rack.

4-8 Hard Drive Installation

Each M28 Mobile Rack includes dummy trays that act as place holders for hard drives. Before using the mobile rack, you must install hard drives to the trays. Hard drives are sold separately.

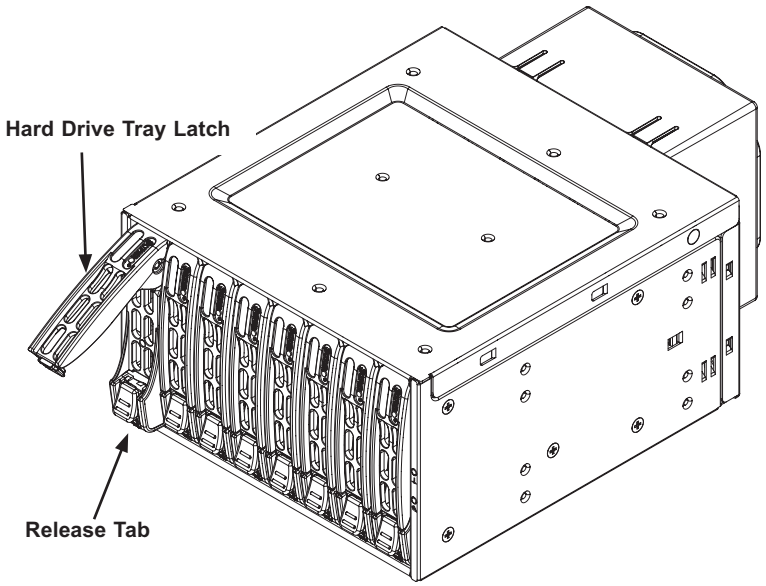


Figure 4-2. Mobile Rack with Hard Drive Trays

To install hard drives into the mobile rack

1. Press the release tabs to open the hard drive tray latch.

2. Using the latch as a handle, pull the tray from the hard drive.

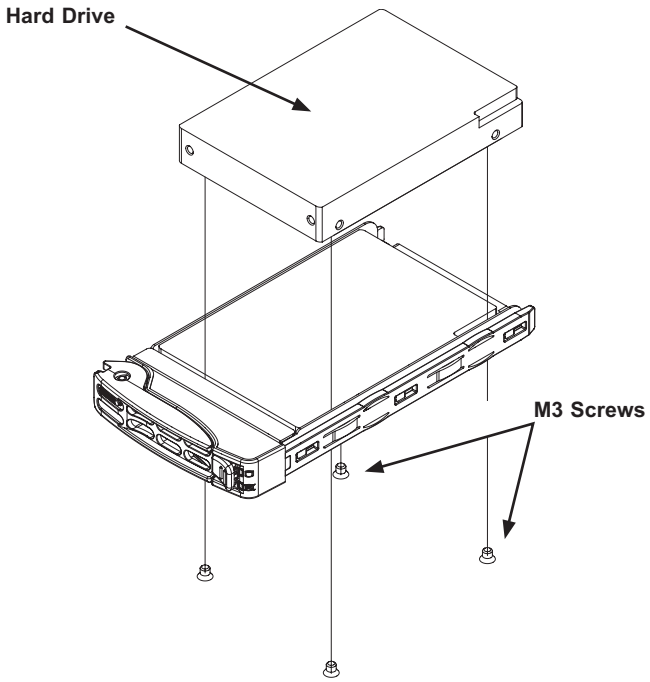


Figure 4-3. Hard Drive and Hard Drive Tray

3. Place a 2.5" hard drive in the hard drive tray.
4. Align the hard drives to the rear of the hard drive tray.
5. Secure the hard drive to the tray using four M3 screws (as illustrated).
6. Using the hard drive tray latch as a handle, slide the hard drive into the mobile rack.
7. Close the hard drive tray handle to lock the hard drive into place.
8. Repeat steps 1-8 for each hard drive that you will install into the mobile rack.

4-9 Connect Data and Power Cables

Use the following instructions to complete setup of your mobile rack.

1. Connect the SAS cables to the mobile rack. A longer SAS cable may be required (see the recommended cables listed earlier in this manual).

2. Connect the power cables from the chassis power supply. A power cable extension may be required.

4-10 Advanced Configuration

Use the following instructions in the unlikely event that you must access the jumpers, buzzer, or other backplane components.

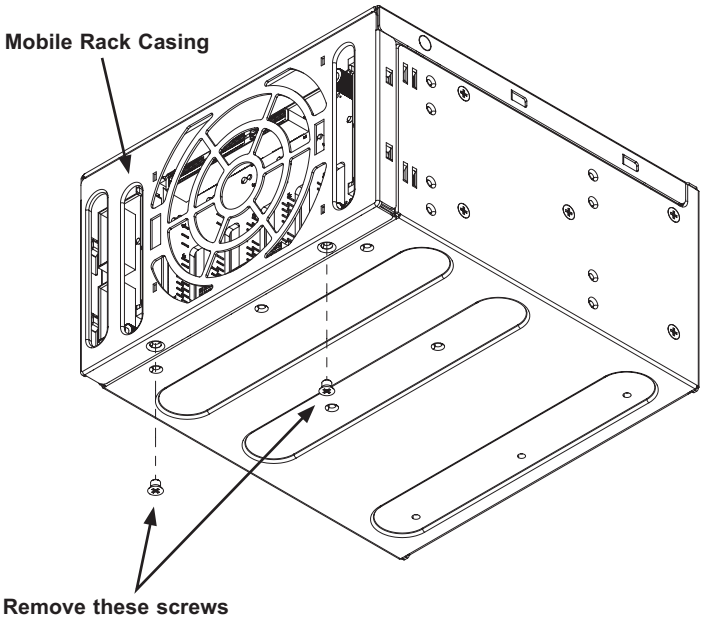


Figure 4-4. Mobile Rack and Rear Casing

To access the mobile rack backplane (optional)

1. Remove the two screws that secure the casing to the mobile rack.

2. Slide the casing downward and remove it from the mobile rack.